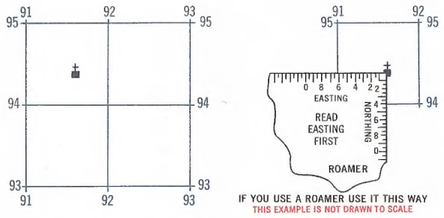
ANYONE CAN READ MAP REFERENCES QUICKLY AND ACCURATELY



IF YOU USE A ROAMER USE IT THIS WAY
THIS EXAMPLE IS NOT DRAWN TO SCALE

SCALE 1:50,000

To find Map reference of ✝ proceed as follows

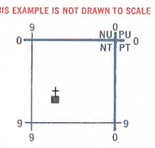
1. Find Number of Grid Line West of ✝ (91)
Ascertain number of tenths ✝ is east of (91)
This is observed to be 6.
Set it down thus, 916. This is known as EASTING

2. Find Number of Grid Line South of ✝ (94)
Ascertain number of tenths ✝ is North of (94)
This is observed to be 4.
Set it down thus, 944. This is known as NORTHING

The Map reference of ✝ is therefore 916944

ALWAYS MEASURE OVER TO THE EAST AND THEN UP TO THE NORTH. IN OTHER WORDS FIND THE EASTING, THEN THE NORTHING.

THIS EXAMPLE IS NOT DRAWN TO SCALE



Note- When using a reference on the 1:250,000 map give the letters of the large square concerned.

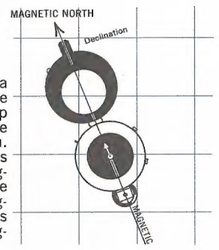
Map reference on 1:250,000 scale is NT9393

A MAP IS ORIENTED

when it is made to

CORRESPOND with the ground it represents.

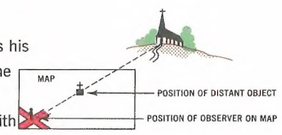
NORTH IS THE TOP OF THE MAP



Here are the four ways to set a map-

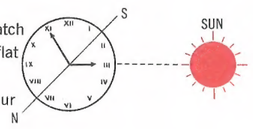
BY COMPASS — With your protractor draw a magnetic north line anywhere on your map. The declination diagram in the margin of the map will give you the direction and the size of the angle between grid north and magnetic north. (Note: Don't use the margin diagram itself as the angles are often exaggerated by the cartographer so that the numerical value of the angle can be inserted.) Place the compass on the magnetic north line and turn the map and compass together slowly until the needle points to magnetic north on the map.

BY OBJECTS- When the observer knows his position on the map and can identify the position of some distant object, he turns the Map so that it corresponds with the ground.

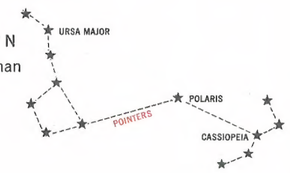


BY WATCH AND SUN-
FOR NORTHERN HEMISPHERE

If summer time is in effect first set watch back on Standard Time. Place watch flat with hour hand pointing to the SUN. True South is midway between the hour hand and XII. True North is directly opposite. This method is very rough.



BY THE STARS- In latitudes below 60° N the bearing of Polaris is never more than 2 1/4° from True North



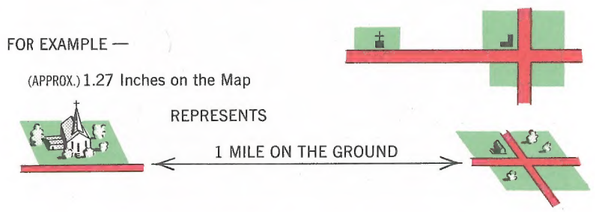
These constellations revolve anti-clockwise around the Pole.

THOUSANDS OF FEET AT 1:50,000

MAPS ARE MADE TO SCALE

This means the ratio of a distance on the map to the actual distance on the ground.

FOR EXAMPLE —



(APPROX.) 1.27 Inches on the Map

REPRESENTS

1 MILE ON THE GROUND

IN THIS CASE THE SCALE WOULD BE (APPROX.) 1.27 INCHES = 1 MILE

OR $\frac{\text{DISTANCE ON MAP}}{\text{DISTANCE ON GROUND}} = \frac{1}{50{,}000}$

THE COMPASS POINTS TO MAGNETIC NORTH

The compass points to magnetic north which may not be the same as grid north. It depends on your locality.

If you live close to the line that runs near Thunder Bay, Savant Lake, Churchill, you're in luck. Here your compass north is approximately the same as grid north. But if you live east of this line, your compass points off to the west, while west of that line it points off to the east. The reason is that the magnetic north pole which attracts the compass needle, is situated on Bathurst Island about 970 miles south of the true north pole. Compasses are made in many forms. The simplest is the common needle compass which consists of a magnetic needle held free to rotate over a compass card. Remember, the needle comes to rest pointing at magnetic north. Turn the compass case gently under the needle until North on the card lies under the north end of the needle. Magnetic directions are then indicated by the card. (More expensive compasses, such as prismatic compasses and orienteering compasses, have additional features which facilitate the reading of directions. Instructional booklets for these compasses may be obtained free from the dealer.)

FINDING COMPASS BEARINGS AND GRID BEARINGS.

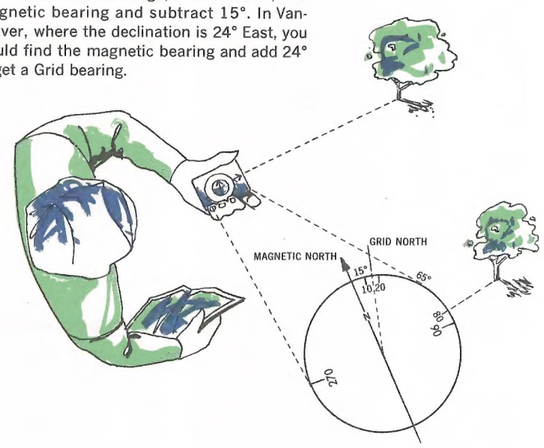
To find grid bearings you must know how much off grid north the compass points in your locality. Look in the margin of your topographic map for the compass "declination". The rhyme is:

Declination East — Magnetic least (i.e. Magnetic less than grid)
Declination West — Magnetic best.

As an example, in Ottawa the compass points off to the west (declination west) about 15°. So according to the rhyme magnetic is greater than grid north.

Bearing of tree is 80° magnetic (by compass) but is 65° grid.

To find Grid bearings, near Ottawa, find Magnetic bearing and subtract 15°. In Vancouver, where the declination is 24° East, you would find the magnetic bearing and add 24° to get a Grid bearing.



FOLLOWING A COMPASS BEARING

With your compass oriented (i.e. with North on the card under the north end of the needle) look along the compass bearing you want to follow. Pick a landmark in this direction. Walk forward to this landmark, then sight with the compass to the next landmark along the route. Continue to destination.

AND MEASURE DISTANCES ACCURATELY

everyone should be able to use a map

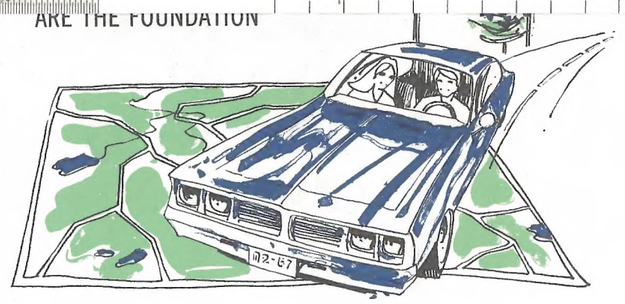
THE OBJECT IS TO FORM A TRUE MENTAL PICTURE OF THE GROUND.

SURVEYS AND MAPPING BRANCH
Department of Energy, Mines and Resources
Ottawa, Canada
1972

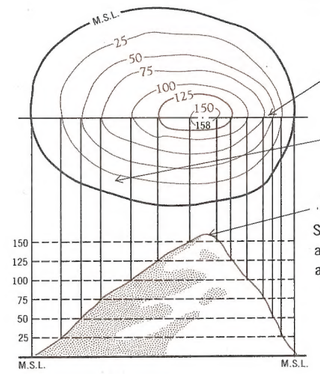
The Honourable Donald S. Macdonald, Minister
J. Austin, Deputy Minitser

S & M Misc. Ser. 72/2

ARE THE FOUNDATION



show the height of ground above sea level (M.S.L.) in either feet or metres and can be drawn at any desired interval.



Roads
hard surface, all weather — dual highway / more than 2 lanes
hard surface, all weather — 2 lanes / less than 2 lanes
loose or stabilized surface, all weather — 2 lanes or more / less than 2 lanes
loose surface, dry weather and unclassified streets
cart track
trail or portage

1 MILE 0 1

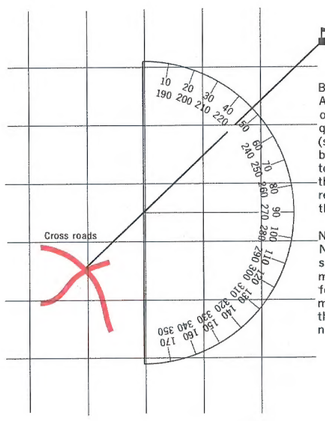
Use the secondary division on the left of Scale Line, for measuring fractional parts as shown below.

1 MILE 0 1

THE MEASUREMENT

IN THIS EXAMPLE THE LENGTH OF THE MEASUREMENT IS 1 3/10 MILES

BEARINGS



Bearings
A protractor is used for measuring directions or bearings on a map. If a bearing is required from the cross roads to the school (see diagram) draw a pencil line on the map between these features. Place your protractor along any N-S grid line on the map with the centre on the pencil line. The bearing is read off the outer scale if less than 180°, off the inner scale if between 180° and 360°.

NOTE: Grid lines do not usually run in a true N-S direction, but as the difference is very small (always less than 3° on Canadian maps) they may be considered as North lines for all practical purposes. (A note in the margin of large-scale topographic maps gives the difference between grid north and true north if great accuracy is required).

RAILWAYS
MULTIPLE TRACK
SINGLE TRACK
ABANDONED
NARROW SINGLE TRACK
STATION
SIDING

BRIDGES
OVERPASS
TUNNEL
FORD (TRAIL)
FORD (ROAD)
FERRY
FOOTBRIDGE
LOCK

HORIZONTAL CONTROL POINT
BOUNDARY MARKER
BENCH MARK
SPOT ELEVATION
TOWER
WELL
WINDMILL OR WINDPUMP
LIGHTHOUSE
HISTORICAL SITE
MINE OR PIT
SCHOOL
RCMP
CHURCH
HOUSE, BUILDING
CEMETERY
AIRFIELD
POWER TRANSMISSION LINE
TELEPHONE OR TELEGRAPH LINE
QUARRY
SAND OR GRAVEL PIT
CLIFF
CUTTING
EMBANKMENT
LAKE
RIVER
CURRENT
MARSH
DRY RIVER BED WITH CHANNELS

WHARF OR PIER
MUD
LAKE (INTERMITTENT)
STREAM
IRRIGATION CANAL DITCHES
INUNDATED LAND (SEASONAL)
AQUEDUCT
CONTOURS
DEPRESSION CONTOURS
ICEFIELD OR GLACIERS
WOODS
SCRUB
ORCHARD

Topographic maps are available for your area. For free indexes and price lists write to the Canada Map Office, 615 Booth Street, Ottawa K1AOE9. Phone 613 994 9663.

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MILES AT 1:250,000